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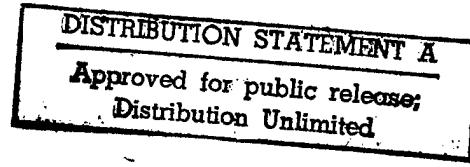
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"A Year Later: A Report Card—Any Outside-the-Box Thinking?"

**Keynote Address of
The Under Secretary of Defense for Acquisition and Technology
Dr. Paul G. Kaminski**

**to the
2nd Annual Space Policy and Architecture Symposium
Crystal City Marriott Hotel, Arlington VA**

February 11, 1997

Thank-you. It's great to see so many interested participants here for this second annual NSIA Space Policy and Architecture Symposium.

Our gathering together today reflects the growing recognition that space has become an area of strategic significance to the United States and to continued U.S. leadership in the world now and into the next century.

The ability of the U.S. and its allies and friends to move toward a robust global market that enjoys increased prosperity and stability will in large measure depend on our stewardship of space assets and supporting infrastructure.

Theodore Leavitt, an accomplished business leader, perhaps best sums up our challenge—indeed our opportunity—when he said, "Most managers manage for yesterday's conditions, because yesterday is where they got their experiences and had their successes. But management is about tomorrow, not yesterday."

Managing for tomorrow requires some thinking "out-of-the-box" to develop and implement a vision for the future. Four space sectors—Civil, Commercial, International, and National

Security—are putting space infrastructure in place today and in the immediate future. These investments will help shape the avenues of commerce for the 21st century.

Within the U.S., cooperation among the Civil and National Security sectors is essential if we are to increase the capabilities of our space infrastructure while meeting the goals of fiscal restraint necessary for the economic health and security of the nation. More importantly, cooperation with the commercial and international sectors will serve to not only reduce the space infrastructure capitalization needs, but bind the participants more closely together—a fundamental tenet of our National Security Strategy of engagement.

DOD, having been a leader in developing and fielding a significant part of the space infrastructure, shares an important role in providing leadership on this path toward greater intersector cooperation. This year's budget numbers confirm this view. The total National Security space budget is about \$14 billion. Of this, the Air Force space budget is about 10 percent of their discretionary total obligational authority.

Aside from the decrease associated with the space-based portion of the old Strategic Defense Initiative, the defense space budget is remaining fairly constant. One exception is the additional \$100 million in the fiscal year 1998 budget and an additional \$509 million over the future years defense plan to accelerate the Space and Missile Tracking System—the low component of the Space-Based Infra Red System—moving the first launch from FY 2006 to FY 2004. In FY 1998, about \$400 million will be spent by the Ballistic Missile Defense organization on promising space technologies and I would expect this to increase in the future.

The important point to remember is that National Security and Civil space expenditures will be approaching parity—primarily from growth in the Civil space sector. The U.S. Department of Commerce estimate for all commercial space activity is about \$8 billion and this number is expected to double in the next ten years with the advent of low and medium earth orbit communications satellites. Out of about 40 total expendable launches projected for 1997, nearly half are DoD and the other half are commercial. There is now a significant dual-use aspect of space—with growing movement from separate defense and commercial industrial bases to an integrated industrial base. In the international sector, at least another \$7.2 billion is being spent—\$5.1 billion in Western Europe and \$2.1 billion in Japan.

In this environment, defense investment in space activities is still significant and keeping pace with inflation, but the relative size of our activities is shrinking with respect to the other space sectors. Over the past two years, our restructure of DOD space management, including the establishment of the Joint Space Management Board, a Deputy Under Secretary of Defense for Space, a DOD Space Architect, and the National Imagery and Mapping Agency, were the initial steps to help facilitate consolidated oversight of space investment and cooperation. It has provided a better organizational basis for greater integration within the national security community and a focus for easier cooperation with the civil, commercial, and international sectors.

As a result of these actions, there is now a direct OSD oversight focus on our space acquisition programs—using the Overarching Integrated Product Team concept—to ensure that Defense-wide goals are met within allowable resources. We also have a coherent approach towards encouraging increased cooperation between foreign allies and the U.S. on military space

cooperation. This is an increasingly important effort as we downsize our permanent presence overseas and look for other means to strengthen important ongoing alliance structures.

The unique U.S. ability to field a space force structure with the demonstrated capability to revolutionize the conduct of warfare can enhance the effectiveness of coalition forces and strengthen the bond between ourselves, our allies and friends. Those relationships will continue to be of fundamental importance to our National Security and increasingly important toward our evolution toward a global community of nations.

While much remains to be done to enhance intersector cooperation, a great deal has already been accomplished over the past year to take advantage of increasing cooperation with each of the other sectors. Let me review for you some of those successes—on a sector by sector basis.

CIVIL SECTOR

Many DoD programs, like the Space-Based Infra Red System, are being increasingly used for civil missions. One initiative involves networking several unclassified and classified DoD programs with civil satellites used by NOAA to provide an early detection capability for forest fires and volcanic activity, with additional capability for tracking ash clouds following a volcanic eruption. This joint DoD/civil network will provide near real-time warning for fire fighting and civil emergency response teams, and warnings to civil airlines of hazardous ash clouds. Potential savings to property damage could exceed several hundred million dollars a year.

We are continuing to evolve what once were stovepiped DOD, NOAA, and international weather satellite systems into a consolidated constellation that enhances overall system performance while sharing system cost among military, civil and international partners. The three-satellite NPOESS system using two U.S. satellites and U.S. sensors aboard a EUMETSAT offers a robust capability that has introduced pioneering policy considerations and procedures that more closely bind the U.S. to our allies. Each partner enjoys a more robust capability at significantly less cost. This approach can serve as a model for future mission capabilities where such sharing of capabilities meet national security objectives. This kind of cooperation is not without problems or issues. We have worked through some tough ones, we have some more to go. There is a big payoff—we're realizing significant performance enhancements at reduced cost.

And another major effort at cooperation involves GPS. GPS has become an international asset for military, civil, and commercial use. The DOD worked closely with the White House on developing a policy which recognizes the particular needs of each sector. The need of the military to have precise location and to deny such information to hostile powers; the need for the civil sector to have precise location for air traffic and precision landing capability without concern over losing that capability during a military crisis; the need for the commercial sector to have access to the best signal possible to build up commercial applications, use and interest; and the need for the international sector to be able to obtain precision location for their sectors on a continuous uninterrupted basis.

COMMERCIAL SECTOR

Moving now to the commercial sector, DOD is heavily engaged in attempting to leverage commercial off the shelf—COTS—capabilities and technology to better align evolving DOD force structure along the path of evolving commercial technology, where applicable, in order to take advantage of production rate efficiencies and reduce future modernization costs.

Particularly in the information industry, the rapid cycle of commercial technical and product evolution is challenging DOD's ability to emulate, or in some cases, influence product development. We are leveraging, in our Global Grid and Asynchronous Transfer Mode initiatives, the commercial explosion of new technologies through our work in setting open interface standards. To deal with this environment, adaptation of what the commercial market is introducing to fit the needs of DOD through rapid prototype-to-field procurement is being introduced with the advent of the Joint Battle Center and Service Battle Labs.

The turnaround or cycle time of a commercial space program is short. In some cases, most notably in satellite communications, the commercial sector can turn a program in 3 years, although a more common cycle time is 4 to 5 years. There are lessons to be learned from the commercial sector by DoD to enable us to speed up our turning radius.

We also need to focus on those areas where the commercial sector is not fully engaged, those areas which are unique to national security and we must maintain our lead. In this new situation where the commercial sector is offering advanced technology on the open market, DOD must continue to focus on staying ahead in key niche technologies while maintaining concurrency with commercially available technologies.

The fast approaching world of open skies being ushered in with the advent of the commercial remote sensing industry will offer opportunities for enhancing global stability as well as potential turmoil if we in DOD are not prepared to effectively integrate such capabilities into our planning, doctrine, and procedures.

The relationship between DOD and the commercial remote sensing industry is likely to be of critical importance for the future because of the potential impact that industry could have on our understanding of the world around us and the timeliness with which events are understood. Understanding that world and its ramifications on national security strategy, service doctrine, and military operations is essential, and we are already actively engaged in those efforts.

An area of commercial activity that is already upon us and that offers to open the world up to the free flow of information and ideas is the space-based communications industry. A global communications infrastructure that will allow poor and rich nations alike to enjoy the benefits of world class connectivity to aid commerce and social interaction is fast becoming a reality.

The obstacles of time and distance that precluded remote populations from enjoying the benefits of information and cultural centers is melting away with the advent of Direct Broadcast Satellites, global satellite communication networks, and internet links. These capabilities cannot help but influence the character of international stability and the manner in which the U.S. conducts military operations.

Where in the past the U.S. had to drag much of its support infrastructure to distant places, the in-place space-based information infrastructure allows us to minimize such projection requirements and sets us on the path to "focused logistics"- one of the pillars of Joint Vision 2010.

INTERNATIONAL SECTOR

In the international sector, the renewed effort brought on by Secretary Perry and continuing with Secretary Cohen to work closely with our allies on military space cooperation has expanded to include such areas as shared early warning, communications, navigation support, weather as I had previously mentioned, and remote earth sensing.

Cooperation in space is at the forefront in our program of increased cooperation with our key allies. The United Kingdom, France, Australia, Thailand, Germany, Italy and Japan have all been involved in efforts to increase cooperation with the U.S.

In the area of military satellite communications, senior representatives from the United Kingdom, France, and Germany will be visiting Washington on March 6 to discuss potential U.S. participation in the TriMilSat communications program. This program is gaining momentum among the three nations, and it is my understanding that the Europeans plan to release their equivalent of an RFP for the product definition phase in late March.

Not only does the program offer an opportunity for U.S. companies to broaden their market into European military satellite communications, but the timing of the TriMilSat program and our recently approved future MilSatCom architecture offers an excellent opportunity for these important allies and the U.S. to ensure communications interoperability among our fighting forces well into the next century.

In the second week of March, we will be meeting with the Italians to follow up on the Statement of Intent for Space Cooperation that I recently signed with my Italian counterpart in January.

NATIONAL SECURITY SECTOR

Any finally, turning now to the National Security space sector, activities are underway to integrate the largest two elements of the federal space infrastructure. The DOD space force structure and the resources supporting the Director of Central Intelligence represent a unique strategic advantage to the U.S. No other nation has made as large an investment nor is likely to have and sustain as capable a combined force structure.

The interdependence of the defense and intelligence communities on the resources of the other has never been as great as it is today. The recognition of C4ISR—command, control, communications, computers, intelligence, surveillance and reconnaissance—as essential for the prosecution of effective and efficient military operations is growing significantly. We are just beginning to quantify the value of C4ISR. While space force structure is only a part of that information infrastructure, space forces offer unique contributions that are extremely important in realizing the military operations visualized in Joint Vision 2010.

Systems that in the past served unique functions of only the Intelligence Community or the Department of Defense will likely become a thing of the past as we continue to merge our common requirements and dissolve boundaries that in the past may have prevented timely utilization of critical information – particularly at the operational level.

This boundary, that in the past separated the distinct missions of wartime and peacetime intelligence, becomes blurred, however, when viewed through the filter of the C4ISR environment.

The evolution of the DOD Space Architect into the National Security Space Architect will help exploit the synergies and delete potential redundancies within the planning between the DOD and DCI. A far superior complementary relationship is the goal of each organization. Closer integration has begun.

In addition to the progress in organizational integration, the release of Joint Vision 2010 and the supporting Service vision statements are beginning to capture the essential concepts that will guide the evolution of the military enterprise and of military thought into the 21st century.

SUMMARY

In the past the barriers between the Civil, Commercial, International, and National Security space sectors were well defined. Today, those barriers are coming down. The sheer size of the National Security sector used to dominate the space landscape. Now, the relative size of the other sectors is increasing and coming into balance—what occurs in one sector affects the others.

We are moving from separate DoD and commercial industrial bases to a single, integrated industrial base. Dual-use technology, commercial-off-the-shelf products and CRAF-like concepts are gaining increasing emphasis, while DoD unique MILSPECs and standards are being de-emphasized. Our challenge in the National Security sector is to leverage and influence commercial technology.

This symposium will challenge you and focus you on these areas. You will have the experts on space in the National Security, Civil, Commercial, and International sectors sharing with you their thoughts and taking your questions. This is a unique opportunity to think "outside the box" and look to tomorrow, not yesterday.

Your assistance in laying out a foundation for transitioning to a barrier free environment—one that will enhance each of the four space sectors—is needed.

Thank-you for your support of these goals and have an enjoyable, productive conference.